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ABSTRACT

This study explored the relationship between young children's affective states and general expectancies for rewarding or punishing events. Subjects were 24 children, ages 4 and 5, from middle-class families. Positive, neutral, or negative affect was induced by having the children think happy, neutral, or sad thoughts for a short period. Two tasks were then given to the children (a maze and a matching problem) to determine if affect induction influenced expectancies for success or failure at a task. Following the tasks, psychometric instruments measuring children's expectancies for serendipitous positive or negative events and locus of control were administered to the subjects. Results indicated that outcome expectancies were independent of locus of control benefits or success anticipations. Positive affective states led to higher scores on the measure of expectancy for serendipitous positive or negative events, but negative states did not produce lower scores. (BRT)

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Effects of Affect Induction on Expectancies for Serendipitous Positive Events, Success on Task Performance, and Beliefs in Internal or External Control of Reinforcement

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Running Head: Affect and Expectancies

Abstract

It has been found that induced affective states exert control over a number of different behavior patterns. It was reasoned that generalized expectancies for noncontingent positive or negative outcomes may mediate the effects of affective states and that positive affect would increase such expectancies, negative affect decrease them. A scale was used to assess young children's (four years old) expectancies for noncontingent positive and negative outcome expectancies (Minnesota Expectancy for Serendipity Scale: MESS). It was predicted that induced affective states would affect children's scores on this scale but not on a measure of locus of control beliefs (SPIES) and that these two scales would be independent. It was also predicted that children's estimates of future success on a task would be unrelated to serendipitous outcome expectancies. These predictions were designed to provide convergent and discriminant validity for the MESS. As predicted, it was found that outcome expectancies were independent of locus of control beliefs or success anticipations. Positive affective states led to higher scores on the MESS, but negative states did not produce lower scores. A theory is proposed for the conditioning of outcome expectancies to affective states.

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Effects of Affect Induction on Expectancies for Serendipitous Positive Events, Success on Task Performance, and Beliefs in Internal or External Control of Reinforcement

There has been a growing interest in the cognitive and affective factors that may determine a variety of important behavior characteristics and patterns such as persistence (Masters & Santrock, Note 1), altruism (Moore, Underwood & Rosenhan, 1973), and self-gratification (Mischel, Ebbesen & Zeiss, 1973; Underwood, Moore & Rosenhan, 1973). It has also been speculated that affective states induced by other experiences may mediate the effects of those experiences on behavior. Thus it has been proposed that the effects of presumed competence (Kazdin & Bryan, 1971), models (Hornstein, 1970), or success and failure (Berkowitz & Connor, 1966; Isen, 1970; Isen, Horn & Rosenhan, 1973; Mischel, Coates & Raskoff, 1968; Mischel, Ebbesen & Zeiss, 1972, 1973; Postman & Brown, 1952) may be due in part to the affective states generated by these variables (Moore et al., 1973).

Mischel and his colleagues have found that thoughts of happy or sad events during a waiting period can substantially influence children's decisions and capabilities to postpone immediate gratification in order to obtain a delayed, more valuable reward, and it was demonstrated that thoughts of positive events extended delay capabilities while thoughts of negative events had little effect (Mischel et al., 1973). It remains unclear, however, whether the effect of thinking happy thoughts on delay capacity is due to their greater capacity to operate as "cognitive distractors" or whether the positive mood engendered by such thoughts affects delay capabilities in some other fashion.

Rosenhan and his colleagues (Moore et al., 1973; Underwood et al., 1973) have found that a brief, antecedent period of thinking about positive or negative events appears to induce an affective state or mood that mediates subsequent levels of altruism and self-gratification. These investigators found that children's tendencies to donate money to other children are increased after the induction of a state of positive affect while a state of negative affect reduces such donations and that both positive and negative affective states incline children to reward themselves generously. In interpreting their results, these investigators speculated that different factors may mediate the effects of positive and negative affect on these variables. Specifically, it was proposed that negative affect may promote behaviors designed to terminate or reverse the affective state, such as "therapeutic" self-gratification, while positive affect may promote behaviors that will continue the affective state or are simply consonant with it, such as being kind to oneself or others (Moore et al., 1973; Underwood et al., 1973). These explanations are clearly reasonable but not necessarily exhaustive since they do not account, for example, for a decrease in altruism following negative affect induction, especially when any positive self-regard engendered by increased altruism should remediate the negative affective state.

While these hypotheses and results are stimulating, they leave intact an even more basic question: Are there factors that mediate the effects of mood states on behavior? Affect induction studies, for example, have made a significant descriptive contribution to the literature but less of an explanatory one since the mechanisms by which affect moderates or determines behavior remain generally unspecified and unexplored. One potential mechanism would be the generalized expectancies for positive or negative outcomes that are generated by affective states. Specifically, it is proposed that the induction of

affective states also induces generalized expectancies for outcomes that are commensurate with the affective state, so that an ongoing state of positive affect includes expectancies for good outcomes (and of reduced probabilities for negative events), and negative affective states include heightened expectancies for unwanted outcomes or ones that are not highly valued (and of reduced probabilities for positive events). Thus a positive mood or affective state should incline one to delay gratification because it is not anticipated that such a delay would result in a reduced probability of attaining the more valued reward (H. Mischel, Note 2; Mischel & Staub, 1965). It should also encourage increased altruism or generosity because of decreased attention to the negative attributes of such behavior (e.g., losing rewards for oneself) and increased consideration of the possibility that such socially valued behavior (Masters & Pisarowicz, in press) would be noticed and rewarded by someone else.

Generalized expectancies for positive or negative outcomes should not necessarily be related to the beliefs one has concerning control over contingent rewards or punishments since positive or negative outcomes are not always related to one's own instrumental behavior. One would expect, then, that affective states might alter expectancies regarding positive or negative outcomes while having no effect on locus of control beliefs. Similarly, although the effects of success and failure have been interpreted in terms of the affective states generated by these experiences (Moore et al., 1973), it seems most likely that some of the effects of success or failure experiences may be mediated by changes in affective states while others are not. Thus, while increased altruism following success may be attributable to an induced state of positive affect (Berkowitz & Connor, 1966; Isen, 1970), expectancies for future success or failure may be directly related to information about one's

performance gleaned directly from the success or failure outcome (Feather, 1966). It might not be expected then that generalized expectancies for positive or negative outcomes would automatically extend to all outcomes instrumentally related to one's competence.

The present experiment was undertaken to explore the hypothesis that affective states, even in very young children, would affect generalized expectancies for rewarding or punishing events that might accompany their behavior during the period of positive or negative affect. Positive, neutral, or negative affect was induced by having twenty-four preschool children think happy, neutral, or sad thoughts for a short period. For example, a child might think of eating an ice cream cone (Positive), falling down and bruising his knee (Negative), or a bunch of coats and hats (Control-neutral). Following affect induction, the dependent measures were administered. The first measure was the Minnesota Expectancy for Serendipity Scale (MESS), a psychometric instrument consisting of twelve questions regarding children's expectancies for serendipitous positive or negative events (e.g., "Sometimes when children leave this room there is a man outside who gives balloons away. Do you think he will be there today?"). It was predicted that a state of positive affect would increase children's expectancies for noncontingent positive events to occur, and that a state of negative affect would decrease such expectancies. The Stanford Preschool Internal-External Scale (SPIES) was also administered so that the independence of the serendipitous event expectancy scale and locus of control beliefs might be demonstrated. Finally, a measure of anticipated success or failure on two tasks (mazes and a matching task) was included to determine whether positive or negative affective states alone, in the absence of actual success or failure experiences, influenced expectancies for success at a task and whether success expectancies were related to serendipitous outcome expectancies.

Method

Subjects. Four- and five-year-old children from nursery schools and daycare centers in a large metropolitan area served as subjects. All subjects were white and from middle-class families. There were four boys and four girls in each of three experimental conditions. Eleven children were excluded who either failed to follow instructions or showed constant positional responding on either the MESS or SPIES.

Procedure. The experimental session was conducted in four phases: 1) induction of affect, 2) measurement of anticipated success or failure, 3) reinduction of affect, and 4) measurement of serendipitous expectancies and locus of control beliefs. One experimenter conducted both affect inductions. To reduce the possibility of experimenter bias, a second experimenter who was unaware of the affect condition administered the dependent measures.

Affect Inductions. Children were randomly assigned to positive, neutral, or negative affect induction conditions. In the positive and negative conditions, the affect-induction techniques were slightly modified from those of Moore et al. (1973) and Underwood et al. (1973). Children first named three things that made them happy (sad) and then thought about each for separate ten-second periods. In the neutral affect condition the subjects identified a coat, a chair, and pencil and then thought about each for ten seconds. Later children were asked what they had thought about and all correctly recalled the content of the affect induction thoughts. This was taken as an indication that they had indeed thought about the proper things during the affect induction period. In the affect reinduction phase the children were then asked to think about the same three things they had thought about earlier.

Anticipated success or failure. This measure always came first in order to determine whether various conditions of affect induction alone, in the absence

of success or failure experiences that were real or fantasied (as in some of the items of the SPIES), influenced expectancies for success or failure at a task. Two tasks were employed, a matching-to-sample problem and a simple maze. Children were told that the experimenter would judge the quality of their performance on one of the tasks and that a machine would automatically make that judgment for the other. This manipulation was included to determine whether the affect manipulation differentially affected expectancies for success as evaluated by another person or as evaluated in a nonsocial fashion. The order of the tasks and which ones were socially or nonsocially evaluated were counterbalanced. After seeing the experimenter solve a sample problem, children were shown a column of 12 lights that was a scorekeeping device. They were told that if they did poorly, only three lights would be turned on (by the experimenter or by a scoring machine), if they did as well as most boys and girls six lights would go on, and if they did very, very well nine lights would be lighted. The subjects were to predict how well they would do, in terms of numbers of lights, before they completed a task so any self-evaluation of their actual performance could not influence their success or failure anticipations. Children completed each task twice in the absence of any feedback concerning their performance and then, at the end of the entire session, all were told they had done well.

Expectancy for serendipitous positive or negative events. Following the reinduction of affect, the MESS was administered. This is a twelve-item scale with an internal consistency of .64 (Kuder-Richardson 21). The items appear in Table 1. While internal-external scales attempt to measure beliefs

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Insert Table 1 about here

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regarding the control one has over the consequences to his behavior, the serendipitous expectancy scale was designed to measure children's expectancies for positive or negative consequences that were unrelated to their behavior. All questions could be answered with a simple yes/no or a choice of one out of two alternatives. A child's score was the sum of the number of positive events expected and negative ones that were not expected. The maximum was 12.

Locus of control beliefs. The Stanford Preschool Internal-External Scale was administered to assess locus of control beliefs (Mischel, Zeiss & Zeiss, 1974). Two scores are derived from this instrument, expectancies for control over positive consequences (+) and over negative consequences (-).

Results

Intercorrelations among measures. The intercorrelations among the MESS, SPIES, and anticipations for successful task performance are presented in Table 2. These revealed that the MESS and SPIES are clearly independent measures, but there was a significant relationship between the SPIES and anticipations for successful task performance. A tendency to endorse items indicating a belief in internal control over successful outcomes was associated with a tendency to anticipate success at a task.

Expectancies for serendipitous positive and negative events. The total expectancy scores were subjected to an analysis of variance in which the main factors were sex of subject and experimental condition. This analysis revealed both a significant main effect for condition ($F = 3.49$, 2/18, $p < .05$). Follow-up comparisons revealed that the induction of positive affect produced significantly higher expectancy scores ($M = 8.13$) than did either neutral ($M = 5.38$) or negative ($M = 5.50$) affect induction procedures ($p < .05$ in

each instance). Contrary to prediction there was no reduction of expectancy scores for children in the negative affect condition.

Locus of control beliefs. These data were subjected to an analysis of variance which revealed that there were no significant effects of affect induction on either of the locus of control scales in the SPIES.

Anticipation of success or failure. These data were subjected to two analyses of variance in which the primary dimensions were (1) sex of subject, condition, and social/nonsocial locus of feedback, and (2) sex of subject, condition, and matching task/maze task. Neither analysis revealed any significant sources of systematic variation.

Discussion

The results of the present study supported one of the predictions tendered, namely that positive affect induction would elevate children's expectancies for positive outcomes unrelated to their instrumental behavior. It had been reasoned that positive and negative outcomes in the natural environment should provide naturalistic affect induction and the affective state induced may overlap in time with the duration of the event and thus become associated with it. Affective states may thus acquire the potential to elicit generalized expectancies for outcomes that are in the general class of those that have been related to such states in a fashion compatible with Guthrie's theory of associative learning (Guthrie, 1952; Hilgard & Bower, 1966).

This reasoning does not differentiate the sort of associative learning that may occur with respect to positive outcomes from that stemming from negative ones, and as noted above, the present data were only partially confirmative. The present results are, however, in keeping with other

empirical findings from which it has been concluded that the effects of positive and negative affect induction may be mediated by different factors. (Moore, et al., 1973; Underwood et al., 1973). It has been proposed that individuals may be inclined during states of positive affect toward behaviors likely to maintain such a state, while negative affect induces behaviors designed to terminate the aversive affective state. If this is true, it might be expected that the conditions for learning an association between affective states and positive or negative events would be maximal for positive affective states but less ideal for negative states: Self-controlled exposure to situations inducing positive affect may well be prolonged, especially so long as the affective state endures, while individuals learn rapidly to alter their behavior in ways that are effective in terminating the affective state alone (e.g., self-therapeutic gratification [Mischel, Coates & Raskoff, 1968; Masters, 1972]) or both the aversive conditions and the induced negative affect.

There is another possible reason for the failure to find the predicted effect of negative affect induction upon generalized expectancies for serendipitous positive or negative events. Consistent with the notion that individuals will alter their behavior to terminate states of negative affect is the possibility that the anticipation of positive events provides a cognitive form of "self-therapy" by which one may self-dispense rewarding stimuli (Masters, 1972; Mischel, et al., 1968). Indeed, thinking about positive events is similar to the actual procedure for positive affect induction. In fact, the data indicate that following negative affect induction, boys' expectancy scores were slightly, though nonsignificantly, shifted in the positive condition. This is not inconsistent with more informal observations of daydreaming and other forms of fantasy release from aversive situations.

A final possibility that will be mentioned only briefly concerns the strengths of the affect inductions. Because of ethical considerations, most researchers involved with the study of affect have taken great care to prevent items of extremely negative valence from entering the negative affect induction (e.g., recalling the death of a close relative). Such procedures seem guaranteed to reduce any effects of negative affect, and thus reduce the interpretability of null results for this variable.

The results of the present experiment were generally supportive in terms of the predictive and discriminant validity of the MESS. The role of serendipitous outcome expectancies as mediators of behavior, especially those related to positive affective states, clearly deserves further investigation. Even more interesting, perhaps, in light of the renewed interest in the role plans, goals and expectancies play in the direction of behavior, is the likelihood that children actually develop a number of discriminated expectancies about their own behavior and its outcomes, in addition to generalized beliefs in locus of control or serendipitous outcomes. To take an example, given a belief in the internal control over reinforcing outcomes (contingent), when consequences are mediated by external agents (which is especially likely for children) deserving behavior may still go unrewarded because of factors external to an individual's control such as the absence or inattention of the agent during the performance of the behavior. Thus locus of control beliefs themselves, as well as other, more overt behaviors, may be mediated by more specific expectancies regarding such things as the probability that one's behavior will merit a positive or negative consequence ("When I do well it's always good enough to make my mother smile, but I don't always do that well.") or the probability that consequence-meriting behavior, good or bad, will actually evoke the appropriate consequences ("If mother catches me with my

hand in the cookie jar, she always spanks me . . . but most of the time she doesn't catch me.") The potential complexity and discriminative nature of the expectancies children generate, in addition to their capacity for mediating other behaviors, clearly deserves increased attention (Mischel, 1973).

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Table 1

Minnesota Expectancy for Serendipity Scale Items

(1) This cup is full of rocks or pennies for the boys and girls. Do you think they'll be rocks or pennies in there?

(2) Sometimes there is a man outside the room who gives balloons away. Do you think he'll be here today?

(3) Is this girl smiling or frowning just because she feels like it? (Picture of a girl's back)

(4) Here is a light I brought with me today. Sometimes my light burns out and doesn't work. Do you think it will work for you today?

(5) Sometimes your daddy brings home a special toy for you and sometimes he doesn't. Do you think your daddy will bring home a special toy for you today?

(6) When children play games, they choose other children to be on their team. Do you think you'll be the first one picked the next time you play a game?

(7) Do you think your friend will go to the store and get a surprise today?

(8) Do you think your daddy will take you on a special trip today?

(9) Sometimes frogs have special days and sometimes they just sit around. Do you think this frog (pictured) had a special day today or did he just sit around?

(10) Somedays one of your toys just breaks. Do you think one of your toys will just break today?

(11) Sometimes mommies cook things that don't taste very good. Do you think you'll have to eat something today that does not taste good and tastes icky?

(12) Do you think your friend will fall down accidentally and hurt himself today?

Table 2

Intercorrelations Among the MESS, SPIES, and Anticipated Success

		SPIES		Anticipated Success
	MESS	+	-	at a Task
MESS	--	.30	.04	.37
SPIES +		--	.09	.56**
SPIES -			--	.13
Anticipated Success at a Task				--

N = 24 for each correlation coefficient

** $p < .01$